

Patent claims

1. An arrangement (1) for protecting against overload of an electric motor (2), in particular of an electrically driven fan blower for a vehicle, having at least one changeover element (6) for controlling, in a speed-dependent manner, two series-connected electric motors (2), in which a switch element (14) in the form of a normally open contact (12) is connected in parallel with the electric motor (2) and, in the event of excessive temperatures, causes the relevant electric motor (2) to be short-circuited.
2. The arrangement as claimed in claim 1, in which each electric motor (2) has an associated switch element (14), which are tripped independently of one another.
3. The arrangement as claimed in claim 1 or 2, in which the switch element (14) is in the form of a thermal circuit breaker, in particular in the form of a bimetallic strip.
4. The arrangement as claimed in one of claims 1 to 3, in which the switch element (14) is integrated in the electric motor (2).
5. The arrangement as claimed in one of claims 1 to 4, in which the switch element (14) is arranged on the mounting side of a brush plate (16) of the electric motor (2) connected in parallel with the electric motor (2).
6. The arrangement as claimed in one of claims 1 to 5, in which the switch element (14) is designed such that it is tripped at a temperature (θ) above a specified motor operating temperature.

7. The arrangement as claimed in one of claims 1 to 6, in which a fuse element (8) is provided for disconnecting a circuit (4) supplying the electric motor (2) when a predeterminable, critical limit value is exceeded.
8. The arrangement as claimed in one of claims 1 to 7, in which an interference suppression capacitor (22) is connected in parallel with the switch element (14).
9. A method for protecting against overload of an electric motor (2), in particular of an electrically driven fan blower for a vehicle, two series-connected electric motors (2) being controlled, in a speed-dependent manner, by means of at least one changeover element (6), in which the electric motor (2) is short-circuited by means of a switch element (14) in the form of a normally open contact (12) which is connected in parallel with the electric motor (2).
10. The method as claimed in claim 9, in which the internal resistance (R_i) of the electric motor (2) is reduced such that a current increase resulting therefrom exceeds a predeterminable limit value.